

A NEW SPECIES OF *ENICOSCOLUS* (DIPTERA: BIBIONIDAE) FROM BRAZIL, WITH ADDITIONAL DISTRIBUTION RECORDS FOR THE GENUS

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Abstract.—A new species of the rare bibionid genus *Enicoscolus* is described from Brazil and a holotype female is designated. Characters separating *Enicoscolus hardyi* new species from the three other known *Enicoscolus* species are summarized. Illustrations to distinguish the three New World species and a key to the world species are provided. New range extensions and seasonal distribution are also given for the New World species.

Key Words.—Insecta, Diptera, Bibionidae, *Enicoscolus*, new species, Mexico, Brazil.

The bibionid genus *Enicoscolus* Hardy was erected for two species, *E. brachycephalus* Hardy and *E. dolichocephalus* Hardy, represented by five females collected in the state of Morelos, Mexico (Hardy 1961). An additional species, *E. collessi* Hardy, was added to the genus, represented by one female, from Queensland, Australia (Hardy 1962). Hardy (1982) reports three additional females of *E. collessi* from the island of New Guinea, which brings the number of known specimens of the genus to a total of nine females. No fossils of *Enicoscolus* are known. An examination of neotropical material from various institutions produced an additional seventeen females, one representing a new species from Brazil.

Because the genus was previously known from the Australian region and Mexico, the discovery of a new species of *Enicoscolus* from South America was expected (Hardy 1962) and provides additional support for an ancient Antarctic land connection between the Australian and South American land masses. However, without a phylogeny only speculation can be made as to the origin of the genus, dispersal events, and the order of vicariance events that may have led to its present-day distribution. A Gondwanian distribution makes it possible that the genus may be found in Africa, and due to its scarcity and small size, additional unknown species seem likely.

Males of *Enicoscolus* are unknown. With the exception of brachypterous *Penthetria funebris* Meigen, no other bibionids are known to be apterous, brachypterous, or parthenogenetic. There is a possibility that *Enicoscolus* may exhibit one of these derived states, making males either difficult to collect or absent.

Depositories.—California Academy of Sciences, San Francisco (CASC); Canadian National Collection, Ottawa (CNCI); Essig Museum of Entomology, University of California, Berkeley (EMEC); Utah State University, Logan (EMUS); Snow Entomological Museum, University of Kansas, Lawrence (SEMC); The Bohart Museum of Entomology, University of California, Davis (UCDC); University of California, Riverside (UCRC); Coleccion Entomologica, Instituto de Biologia, Universidad Nacional Autonoma de Mexico (UNAM); United States National Museum of Natural History, Washington, D.C. (USNM). Terminology of morphology follows McAlpine (1981).

KEY TO THE SPECIES OF *ENICOSCOLUS*

- 1a Rostrum developed (Fig. 3); Mexico *dolichocephalus*
- 1b Rostrum undeveloped (Figs. 1 & 2) 2
- 2a(1b) Apical segment of palpus short (see Hardy 1962: 784, fig. a); Australian region *collessi*
- 2b Apical segment of palpus long (Fig. 1 & see Hardy 1961: 83, fig. 1); Mexico and Brazil 3
- 3a(2b) Dorsum of thorax orange; shape of head as Fig. 1; hind basitarsus slender, elongate, relative to tarsomeres 2 and 3 (Fig. 4); Brazil *hardyi*
- 3b Dorsum of thorax black; shape of head as Fig. 2; hind basitarsus not so slender, elongate, relative to tarsomeres 2 and 3 (Fig. 5); Mexico *brachycephalus*

Enicoscolus hardyi Fitzgerald, NEW SPECIES
(Figs. 1, 4)

Type.—Holotype female. BRAZIL. West border, Mato Grosso, May 1931, R.C. Shannon; deposited: Snow Entomological Museum, University of Kansas (SEMC). Flagellum of one antenna, one hind leg, and apical two tarsal segments of the remaining hind leg missing.

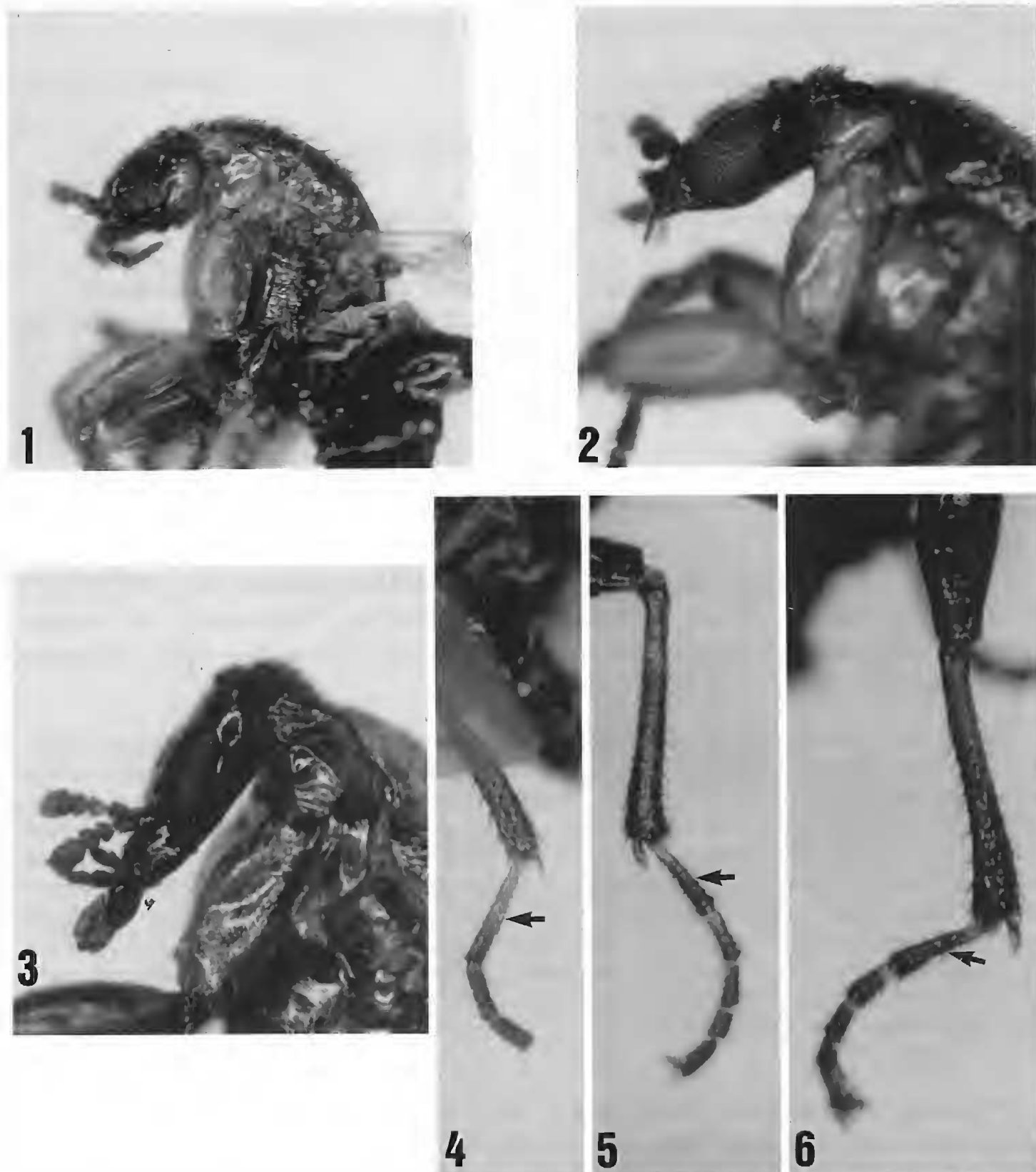
Female.—Entirely orange-yellow with the exception of brown-orange abdomen and black occiput. Head: Antennae capitate. Antenna with six or seven flagellomeres (apical segments difficult to distinguish); first two flagellomeres easily distinguishable, remaining flagellomeres composing a capitate knob. Palpus four- or five- segmented (basal segments difficult to distinguish). Apical palpal segment elongate, $1.5 \times$ length of preceding segment (Fig. 1). Rostrum undeveloped (Fig. 1). Thorax: Mesonotum anteriorly (presuturally) setose, posteriorly (postsuturally) with setae in dorsocentral rows and laterally. Wing: About 2.5 mm long, anterior veins orange to light brown, posterior veins and stigma concolorous with membrane. Membrane with microtrichia. Basal portion of Rs subequal to r-m cross vein. Legs: Fore tibia with anterior spur rudimentary, posterior spine strongly developed. Hind basitarsus slender, elongate (≈ 0.5 mm), as long as next two segments combined (Fig. 4). Hind tibial spurs short, slender, flat, apically rounded.

Male.—Unknown.

Diagnosis.—*Enicoscolus hardyi* can be separated from other *Enicoscolus* species by the undeveloped rostrum (Fig. 1), elongate apical segment of the palpus (Fig. 1), orange thorax, hind basitarsus more slender, elongate relative to tarsomeres two and three (Fig. 4), and geographic occurrence (distribution; Brazil). *Enicoscolus dolichocephalus* differs by the developed rostrum (Fig. 3), apical segment of palpus short, hind basitarsus not so slender, elongate, relative to tarsomeres two and three (Fig. 6), and known only from Mexico. *Enicoscolus collessi* differs by the apical segment of palpus short (see Hardy 1962: 784, fig. a), dorsum of the thorax black, and known only from the Australian region. *Enicoscolus hardyi* is most similar to *E. brachycephalus*, but the latter species differs by general shape of the head (compare Figs. 1 and 2), dorsum of the thorax black, hind basitarsus not so slender, elongate, relative to tarsomeres two and three (Fig. 5), and known only from Mexico.

Etymology.—The specific name honors Elmo Hardy, University of Hawaii, whose comprehensive works on world Bibionidae have made further studies of the family possible.

Material Examined.—See Type.



Figures 1–3. *Enicoscolus* spp., female head, lateral view. Figure 1. *E. hardyi*. Figure 2. *E. brachycephalus*. Figure 3. *E. dolichocephalus*.

Figures 4–6. *Enicoscolus* spp., hind leg (arrow indicates basitarsus). Figure 4. *E. hardyi*. Figure 5. *E. brachycephalus*. Figure 6. *E. dolichocephalus*.

Enicoscolus brachycephalus Hardy
(Figs. 2, 5)

Enicoscolus brachycephalus Hardy 1961: 82.

Type Material Examined.—Holotype female; MEXICO. MORELOS: Yautepec, 29 Oct 1956, R. & K. Dreisbach; deposited USNM.

This species was previously represented by two females collected from Morelos, Mexico, in September and October (Hardy 1961). The following additional

records expand the geographic distribution of the species about 1,140 km northwestward to southern Chihuahua, Mexico, and expand the seasonal distribution of the species from July–November.

Other Specimens Examined.—MEXICO. *CHIHUAHUA*: 4.8 km W of Santa Barbara, 22 Jul 1967, 1 female (UCDC). *JALISCO*: Guadalajara, 2 Oct 1966, G.E. & A.S. Bohart, 1 female (EMUS). *MORELOS*: Cuernavaca, Nov 1944, N.H.L. Krauss, 2 females (USNM). *PUEBLA*: river E of Tepexco, 1250 m, Highway 160, 24 Aug 1977, E.I. Schlinger, 1 female (EMEC); narrow canyon 8 km S of Tecamachalco, 2103 m, flight trap, 10 Aug 1967, M.E. Irwin, 3 females (UCRC). *VERACRUZ*: Nov 1963, N.H.L. Krauss, 1 female (USNM).

Enicoscolus dolichocephalus Hardy
(Figs. 3, 6)

Enicoscolus dolichocephalus Hardy 1961: 82.

Type Material Examined.—Holotype female; MEXICO. *MORELOS*: Tepoztlan, 20 Oct 1957, R. & K. Dreisbach; deposited USNM.

This species was previously represented by three females collected from Morelos, Mexico, in October (Hardy 1961). The following additional records of this species extend the geographic distribution 1,425 km northwestward to Sonora, Mexico, and expand the seasonal distribution from September–October.

Other Material Examined.—MEXICO. *MORELOS*: 19.2 km E of Cuernavaca, 1310 m, 14 Aug 1954, J.G. Chillcott, 1 female (CNCI); Canon de Lobos, 6 Sep 1976, J.M. Pino, 1 female (UNAM); Canon de Lobos, 6–11 Sep 1976, J. Butze, 1 female (UNAM); (MORELOS?), Highway 95D, km 62, 3.2 km SE of LaPera, (lava beds), 30 Oct 1973, C.W. O'Brien, 1 female (CASC). *NAYARIT*: Tepic, 15–17 Sep 1953, B. Malkin, 1 female (CASC). *SONORA*: Alamos, 7 Sep 1970, G.E. & R.M. Bohart, 2 females (EMUS).

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